Calculation Sheet

PROJECT N° & TITLE	P10508 - STA MIL09					SHEET	1 of 2
ORIGINATOR	HC	DATE	13.3.2026	CHECKED BY	MF	DATE	13.3.2026

REV	P01	P02.01	P02	P03.01	P03						
BY	ST	ST	ST	HC	HC						
DATE	29.11.2024	21.3.2025	25.4.2025	29.1.2026	13.3.2026						

SUBJECT	Daily Water Demand and Break Tank Sizing

Firmato digitalmente
ROBERTO CEREDA
Data: 30/03/2026 10

Calculation Reference: UNI 9182-2014

Total Fixture Units Calculation

Fixture Type	Fixture	Qty	Total Fixture Unit	Comment
Washbasin	2	11	22	
Shower	4	2	8	
Kitchen sink	4	1	4	
Dishwasher	3	1	3	
Hand spray	2	3	6	
Toilet		11	0	Served by NPW. Storage by Civils
Bib tap		6	0	Served by NPW. Storage by Civils
1/2" hydrant (consider CDU make-up)	4	16	64	
3/4" hydrant (consider CHW make-up)	6	4	24	

Overall Fixture Unit (hot water + cold water)	131
Flowrate (L/s)	3.07
Pipe size	
Velocity (m/s)	1.56
Diameter (mm)	50

Break Tank Sizing Calculation

Considerations for CHW and CDU make-up:

Tank volume sufficient for	**15**	minute peak
Flowrate (L/s)	**3.07**	Based from fixture units calculation

Consideration for Humidifier supply:

Tank volume sufficient for	**8**	hour demand
Humidification worst case load (L)	**242**	Based from Psychrometric calculation (MECH)

Calculation Sheet

PROJECT N° & TITLE	P10508 - STA MIL09					SHEET	2 of 2
ORIGINATOR	HC	DATE	13.3.2026	CHECKED BY	MF	DATE	13.3.2026

REV	P01	P02.01	P02	P03.01	P03						
BY	ST	ST	ST	HC	HC						
DATE	29.11.2024	21.3.2025	25.4.2025	29.1.2026	13.3.2026						

SUBJECT	Daily Water Demand and Break Tank Sizing

Demand	Storage Time (s)	Flowrate (L/s)	Tank Vol. (L)
CHW & CDU make-up	900	3.07	2,763.00
Humidification	691,200	0.000	242.00

Overall Volume +10% F.S. (L) 3305.5

Adopted tank size (m)			Adopted Tank Volume (L) (Considering 300-400mm fee board)	Effective/Usable Tank Volume (L)
L	W	H		
2	1	2.5	5,000	4,000

Break Tank Supply Pipe Sizing Calculation

Tank Volume (L)	Assmed Fill time (hr)	Peak Fill rate (L/s)	Pipe Size (mm)	Velocity (m/s)
4,000	0.33	3.33	50	1.698